REMARKS

Upon entry of this Amendment, claims 12-19, 24, 26-29, 34, 36-51, 55, 56, 61-91 and 94-95 are all the claims pending in the application. Claims 1-11, 20-22, 25, 30-33, 35, 52-54, 57-60, 63 and 65-68 have been withdrawn from consideration in this application but may be subsequently filed in a further application. Claims 92 and 93, which are subject to a restriction, have been amended to be directed to the subject matter of the instant application, e.g., a stand-alone receive system. Applicant expressly reserves the right to pursue claims directed to a radar system in a subsequent application.

Applicant gratefully acknowledges the allowance of claims 12-19, 23, 24, 26-29, 34, 36-51, 55, 56, 61-74, 80-82, 94 and 95 and the indicated allowable subject matter in claims 42-52, 55, 56 and 61, which are presently objected. Claims 75-79, 83-88, 90 and 91 presently stand rejected. Specifically, claims 75-79, 83-88, 90 and 91 are rejected under 35 U.S.C. § 102(e) as being unpatentable over Martin et al. (USP 6,188,915).

For the reasons set forth below, Applicant respectfully traverses the rejections and requests favorable disposition of the application.

Argument

Applicant respectfully submits that the prior art references of record, including the Martin reference which is presently cited in the non-final office action dated July 29, 2005, disclose systems and processes that are completely different than that which has been proposed by Applicant in the instant application.

Applicant is a fellow in the IEEE and has been so since 1963. Applicant is also the recipient of the David Sarnoff Award for Electronics. In 1983 Applicant was awarded the IEEE Pioneer Award for inventing Pulse Doppler Radar and has been a charter member of the University of Maryland Innovation Hall of Fame since 1986. Accordingly, Applicant is highly knowledgeable and skilled in the instant state of the art.

Applicant has conceived and developed a "stand alone" detection and receiving capability for wireline and wireless signals; the present application being directed mainly toward the wireless applications, however certain of the claims cover both wireline and wireless applications. In particular, Applicant's system is capable of identifying fluctuating or fading signals from background "noise" without the requirement of auxiliary information. This "stand alone" feature is of particular importance because often times it is not known whether a signal is even present, let alone detectable.

As disclosed and claimed, one unique feature of Applicant's invention is a topological number array (TNA) which facilitates a heretofore unknown method for rapidly deriving an equivalent noise portion of the signal-plus-noise carrier samples and permits determination of the polarity of each noise estimate.

Applicant submits that the invention disclosed and claimed in the present application is vastly different than the system disclosed in Martin et al. For example, in the instant application the noise is reduced relatively early, e.g., by immediately processing a receive signal using the disclosed "topographical number array" (TNA) method. In accordance with the TNA method, one or more predetermined surrogate signals are utilized to perform comparisons with the receive signal and reduce the inherent noise level. By employing the TNA approach, an electrical phase angle (phi) is

obtained with high precision and the ability to multiply the phase angle, phi, without encountering phase dispersion is provided.

Martin et al., on the other hand, discloses a method that is fundamentally different than Applicant's and which does not employ the disclosed and claimed TNA approach of the present application. That is, in Martin et al., receive signals that are received by a plurality of antenna elements are continuously monitored and weighting coefficients are iteratively processed. (Col. 3, lines 24-36). More particularly, Martin et al. does not disclose the use of predetermined surrogate signals. That is, in Martin et al. an antenna pattern is optimized over time by iteratively changing each of the respective weighting coefficients corresponding to each antenna element. The disclosed refinement of the coefficients is implemented to account for changes in the conditions as various transmitter/receiver units move relative to the antenna, e.g., in a TDMA cellular telephone system. As discussed above, the system of the present invention is very different from the method of Martin et al. at least because it utilizes predetermined surrogate signals, i.e., not subsequent "real" received signals, to quickly calculate and remove inherent noise in the receive signal, and significantly improve the signal to noise ratio, while avoiding any need to continuously monitor subsequent signals to continuously process and alter weighting coefficients for the antenna, as required by Martin et al.

Applicant has amended the claims to clarify the distinguishing features discussed above. Applicant submits that the claims, particularly, claims 75, 78, 79, 83, 84 and 86, and all claims dependent thereon, patentably distinguish over the cited prior art of record. Accordingly, favorable disposition of the application is respectfully requested.

Conclusion

In view of the foregoing amendments and remarks, the application is believed to be in form for immediate allowance with at least claims 12-19, 24, 26-29, 34, 36-51, 55, 56, 61-91 and 94-95, and such action is hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, he is kindly requested to **contact the undersigned** at the telephone number listed below.

Respectfully submitted,

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